



ENERGY-SAVING MEASURES ARE WORTH THE CANDLE

Electricity prices continue to creep up in most countries of the world. That's despite the price of oil being at levels not seen so low for some 13 years and natural gas for power stations increasingly available. But even if prices were to fall, if there were cost-effective ways to cut energy consumption in industrial production, it would still make sense to use them.

Well, there are ways, and SIPA offers many of them in areas all along its lines for producing and filling bottles, through to shrink-wrapping them. SIPA has identified four areas in particular where energy consumption can be made more efficient: in stretch-blow molding, in filling and mixing, in conveying, and in shrink wrapping. Savings can come directly - for example through the

use of more energy-efficient heaters - and also indirectly, via features that, say, reduce the need to compress air.

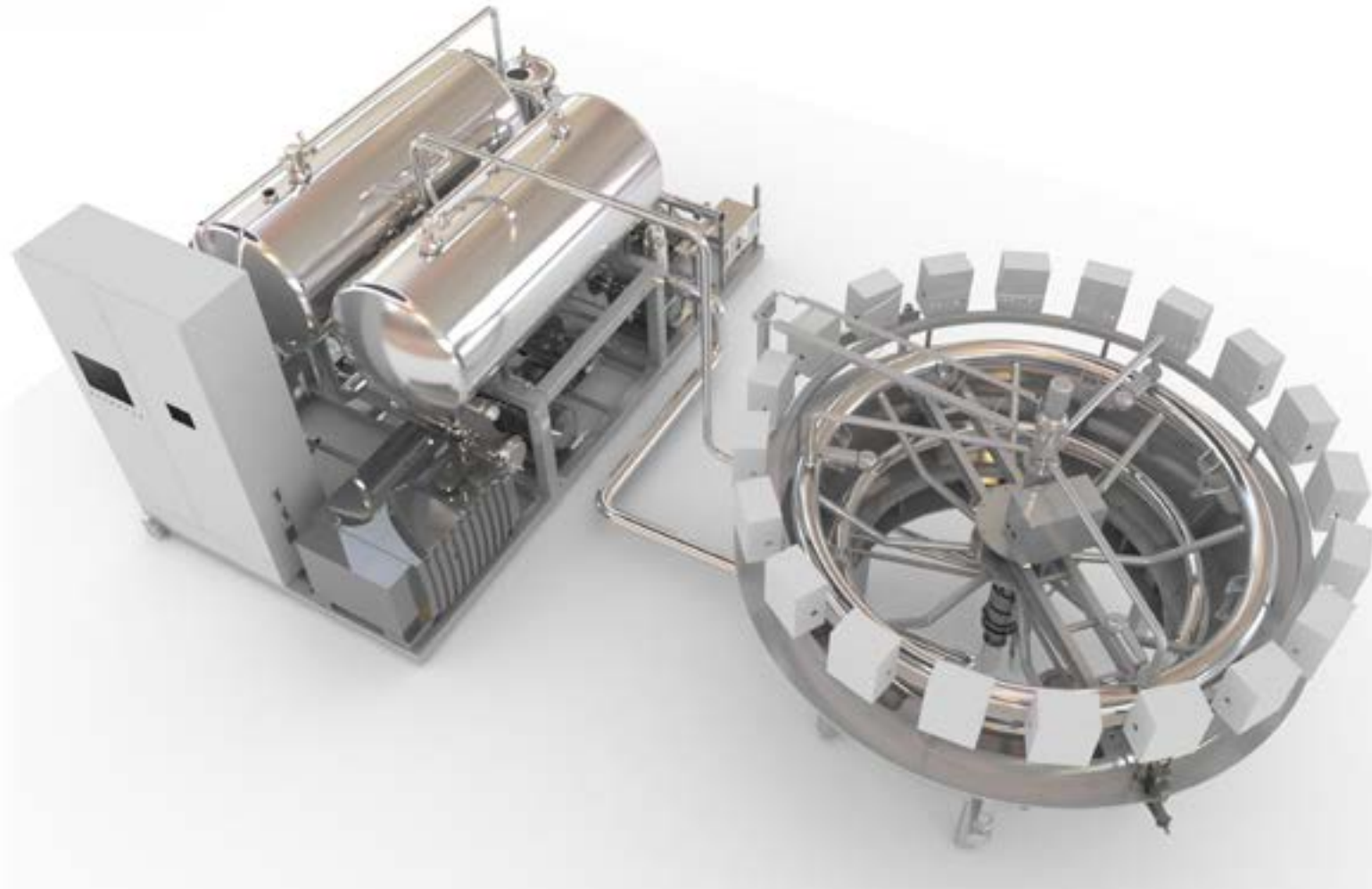
BOTTLE BLOWING

A major consumer of energy in reheat stretch-blow molding machines is the ovens. With its "green" ovens on the SFR EVO3, SIPA has succeeded in making major savings. Compared to earlier generations of oven, electrical consumption is down by up to 40%, thanks to the use of new lamps and special materials and coatings for the reflectors. There are also plenty of ways to cut down air consumption in the blowing section. SIPA's high-speed SFR EVO3 rotary stretch-blow molding unit, for example, incorporates several new features

that are already helping customers reduce their utility bills.

On the redesigned blowing valve block, dead air volume has been reduced by 35% and air consumption can be as much as 25% less, depending on bottle design. SIPA has also replaced pneumatic compensation with mechanical compensation, so high-pressure blowing air is now used only on the final 0.2 mm of the stroke. This leads to a massive reduction in air consumption, particularly with smaller bottles.

An optional feature on the SFR EVO3 is the ARS Plus system. This recovers air for re-use as primary air and machine service air. Tests on an SFR 24 model fitted with ARS Plus showed it was possible to reduce the total amount of high pressure air nee-



times. Use of isolator technology and automatic COP (Clean Out of Place) means that run times between separate CIP (Clean In Place) procedures can be extended to 120 hours, cutting overall

energy consumption for such procedures in half; water consumption goes down by a similar amount. Hot-fill lines obviously offer potential for energy savings. Thermal recovery systems in the

cooling tunnels after the filling operation can capture as much as half of the heat that would otherwise be lost, and channel it into other process areas.

ded by 16%, and cut overall air consumption in half. As a result, the SFR EVO3 can be fitted with a much smaller air compressor, which obviously uses less electricity.

FILLING AND MIXING

Big energy savings can also be made in the filling station. Fillers

in SIPA's Flextronic range can be configured in the XFILL version, in which the carbonating or mixing unit tank can be used as a buffer tank for the filler, which then has no need for an on-board product tank.

XFILL makes it possible to reduce electrical power consumption and can also cut consumption of

CO2 by 10%. A further advantage with XFILL is that the extra product stability it provides enables carbonated soft drinks to be filled at higher temperatures than before – around 18°C or more – which reduces the need for energy-intensive product chilling. Still more savings are achievable through increased run



CONVEYING AND WRAPPING

There is even energy to be saved once the bottles have been blown and filled. In the bottle conveying system, for example, a high-end gearbox, may use as much as 40% less energy than a conventional gearbox, and require less maintenance.

The gearbox will clearly cost more upfront, but in most if not all cases, it is an investment worth making.

Energy-saving shrink-wrapping systems can also help reduce electricity bills. Latest equipment has improved hot air channeling systems that direct more heat to the shrink film and less to the conveyor belt, and thermal power and cooling fan speed can be adjusted in real time, according to product output.

The shrink tunnel can also be fitted with automatic doors at both ends to reduce heat loss.

LESS WATER

There are numerous opportunities to save water on filling lines. For example, SIPA's Sincro Bloc units, which combine blowing, filling and capping into a single unit, have no need for a rinser between blowing and filling.

In the filling section itself, the MASSBLEND "liquid ring" vacuum pump with closed-circuit water circulation can cut water consumption by as much as 95%. And for filling operations where a bottle base cooling system is required (for carbonated soft drinks and pressurized products for example), an optional fully draining stainless steel basement with liquid recovery can cut consumption by up to 95% here too.

